

Sphagnum moss, but actually vandalizing the whole Sarracenia patch.

Since I believe in nomenclatorial recognition of taxa which can be readily recognized in the field, and the characters of which exhibit geographic relationships, I get regarded by workers unfamiliar with the plants in the wild as a "splitter." Correspondingly, some of the taxa I have accepted in major categories have gotten reduced in status or even ignored. Typical is the situation with the northern and southern representatives of Sarracenia purpurea. Since they do intergrade there would be no point in following Rafinesque and classing them as distinct species; but as their ranges are distinctive their segregation as subspecies seems reasonable. For what it is worth I may note that they can be told apart in the dark: to the fingertips the pitchers of the northern plant are slippery-smooth, of the southern one rough-hairy.

Indeed, winged taxonomists are dependable here; as pointed out in a recent number of *Castanea* (see page 51 of this issue of CPN) entomologists recognize distinct species of those remarkable mosquitoes which have developed immunity to the digestive enzymes and so go through their life-cycle in the pitcher liquid. The southern mosquito occupies the Carolinian life-zone, the northern one the transition and boreal life-zones. The state of Delaware lies in the Carolinian zone, but the northern pitcher plant ranges into it; and it turns out that the northern mosquito follows its host plant into the "wrong" life-zone.

In the same article I formally proposed a status change of Sarracenia jonesii for use by workers who question its species distinctness. In the seemingly authoritative *Flora Carolina* it has been reduced to a mere forma of Sarracenia rubra. But forms are sporadic variants in the midst of normal populations, whereas in this case there is complete geographic segregation, characteristic of the category subspecies.

In an earlier paragraph I indicated the need for further study and naming of the relatives of S. rubra ssp. jonesii in the Gulf lowlands of Alabama and adjoining states. I will close this discussion with pointing out that there is also an unrecognized form of S. purpurea ssp. venosa there: on a visit to Mobile, Ala. in the 1930's I was shown in a garden a strikingly beautiful plant. When the red pigment of ssp. gibbosa is deficient the result is the odd color-form heterophylla, with tissues yellowish throughout. The Mobile variant of ssp. venosa had yellowish herbage, but the flower petals were a lovely bright pink. It deserves rediscovery.

EDGAR T. WHERRY'S SARRACENIA PUBLICATIONS

by J. A. Mazrimas

Edgar Wherry is a prolific writer on various plant species, namely Phlox, orchids, ferns, and rare or endangered species. In addition to these, he published six articles on carnivorous plants between the years 1929 and 1972. Most of his writings were based on several extensive field trips concerned with observing, measuring, and collecting Sarracenia from different localities.

In his first carnivorous plant paper published in 1929, Wherry describes each species of Sarracenia in relation to the acidity of the soil and of the liquor inside the pitcher. As a result of this field study, he discovered a new species that he subsequently named Sarracenia jonesii, a new hybrid, S. minor x S. rubra, and proposed that the variety status of S. purpurea var. heterophylla be called mutation heterophylla. He found that most of the Sarracenia species grew in soil that had an acidity range of pH 4.5 - 4.7. In certain alkaline ponds with deposits of calcium carbonate known as marl, S. purpurea was found to grow here because the soil's nutrient deficiencies allayed competitors. Measurements on the acidity of unopened pitcher liquors showed most of them to be acid with the exception of S. alata and S. leucophylla which were mostly circumneutral.

In the summer of 1932, Wherry took an extensive trip throughout the southeastern range of the U.S. which resulted in a series of publications describing the trip itself, the geographical ranges of the Sarracenia and the naming of a new species. This trip was financed by a Mr. Burk, a noted horticulturist who wished to establish all the Sarracenia species in a wildlife preserve in New Jersey. In order to survive the severe winters in that area, the species had to be gathered from the most northern parts of the geographical ranges. This opportunity allowed Wherry to note various ecological factors in different bogs, to assess the extent of destruction of bogs and meadowland, and to study the degree of intergradation between two species. He published a paper describing colonies of a new species, S. oreophila (mountain loving) which he found growing around the northern Alabama-Georgia state border. Although it is closely related to S. flava, its distinctive flat ensiform phyllodea, flowers with a faint, musty scent and the sparingly pubescent to glabrate umbrella distinguished it from all other species.

In a separate paper, Wherry noted that in examining S. purpurea throughout its extensive range, that there were foliage differences, as noted previously by Rafinesque in 1840, between the average northern and southern plants. Therefore, the southern form, commonly found in the Gulf Coastal Plain up to New Jersey state was designated the subspecies "venosa." A rose-pink flowered form with white sepals was found near Theodore, Alabama and called variety "Louis Burk." The northern subspecies which intergrades with the southern form around New Jersey was termed "gibbosa" and is exceptionally bristly on the outside of its long and narrow pitchers. Although "venosa" is short and broad in outline, with the hollow part averaging less than three times as long as wide, the wings may extend well beyond the lip of the hollow part. On the other hand, the narrow-winged variety ("gibbosa") has a range extending north from Maryland-Delaware to as far west as the eastern slope of the Cascade range. (See CPN 1, 1972.) This variety has a true yellow-flowered mutant now called S. purpurea forma heterophylla.

In Wherry's fifth publication, a real need arose for satisfactorily mapping the distribution of nine species of Sarracenia because of

errors made by previous publications. Each species was plotted on a separate map which had two geologic lines superimposed: a northern latitude line about the 40th parallel representing the limit reached by the last Wisconsin ice sheet, and a southern latitude line which snakes above and below the 35th parallel and denoted the fall line. This latter line indicates the maximum point to which the seas extended during the Cretaceous time about 80 million years ago and inundated much of southeastern North America. Many species of flowering plants grew in alluvial sands and clays on boggy pleneplains above this fall line. Meandering streams and lakes as well as swamps and bogs dotted the land under the warm semi-tropical sun. During the Tertiary uplift of the land, mountains began rising, some plants adapted to the cooler climate of elevated areas while other plant species gradually occupied the land left by the retreating sea. Usually, plants and their seeds found their way down various river valleys and finally developed colonies on the newly formed Coastal Plain.

It is believed that the Sarracenias migrated in this manner.

Darlingtonia developed colonies far on the Western Plains so that when the Rocky Mountains and later the Sierras began their uplifts during and after the Tertiary Period, the seeds failed to reach drainage basins of the eastern rivers. Each of the species seemed to remain either in mountain growing areas or seeds that were dispersed followed certain defined river systems and thus remained there since the close of the Tertiary Period. Peninsular Florida emerged late from the seas, too late for most species to form colonies there.

The final paper concerns certain aspects of taxonomy. He feels that C.R. Bell was incorrect in assigning S. jonesii to status of a form of S. rubra but insisted its distinctiveness is such that its rank should be raised to that of subspecies. The two purple pitcher plants, S. purpurea ssp. purpurea (northern range renamed from ssp. gibbosa) and S. purpurea ssp. venosa (southern range) are distinguishable on both morphological grounds discussed above and the fact that the plants are hosts to different Wyeomyia mosquitoes: in the north W. smithii, and in the south W. haynei.

PUBLICATIONS

- 1) Wherry, Edgar T. Acidity relations of the Sarracenias. Journ. Wash. Acad. Sci. vol. 19, pp 379-390. 1929.
- 2) Wherry, Edgar T. The geographical relations of Sarracenia purpurea. Bartonia vol. 15:3, pp 1-6. 1933.
- 3) Wherry, Edgar T. The Appalatian relative of Sarracenia flava. Bartonia vol. 15:3, pp 7-8. 1933.
- 4) Wherry, Edgar T. Exploring for plants in the southeastern states. The Scientific Monthly vol. 38, pp 80-85. 1934.
- 5) Wherry, Edgar T. Distribution of the North American pitcherplants. In Illustrations of N. Amer. Pit. Plts., Smithsonian Inst., Washington, by M. V. Walcott. 1935.
- 6) Wherry, Edgar T. Notes on Sarracenia subspecies. Castanea vol. 37:2, pp 146-147. 1972.